

ABSTRACT OF THE DISCLOSURE

Low cost moldable antennas and methods of forming the antennas are described. Elements of the antennas are conductive loaded resin-based material having a conducting wire center. The conducting wire center can be single strand, multi-strand, insulated, or non-insulated wire. The conductive loaded resin-based material comprises micron conductor fibers, micron conductor powders, or in combination thereof homogenized within a base resin host wherein the ratio of the weight of the conductor fibers, conductor powders, or combination thereof to the weight of the base resin host is typically between about 0.20 and 0.40. The micron conductive fibers or powders can be stainless steel, nickel, copper, silver, carbon, graphite, or plated particles or fibers, or the like. The conducting metal wire can be copper, nickel, stainless steel, silver, or the like. Antennas can be fabricated using methods such as injection molding, over-molding, thermo-set, protrusion, extrusion, co-extrusion, compression, or the like to achieve desired electrical characteristics. The elements of the antennas can be virtually any shape or size desired. The conductive loaded resin-based material having a conducting wire center provides very efficient antenna operation.